Fish and Wildlife Branch Highlights

2009–2010

Yukon
Environment

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ISBN: 978-1-55362-477-6

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Fish and Wildlife Branch Highlights 2009–2010

The Fish and Wildlife Branch leads, for the department of Environment, the management of wild species and their habitats for the conservation, appreciation and sustainable use of naturally diverse and changing ecosystems, in a manner that is collaborative and adaptive.

But how does this official mandate translate into "real life"?

Within our broad mandate, our activities and priorities are guided by legislation, such as the Yukon Wildlife Act and the federal Fisheries Act, by national and international commitments and agreements, such as the Federal Species at Risk Act (SARA) and the Porcupine Caribou Management Agreement, and by land claim agreements. Our work in support of community-based fish and wildlife work plans, species-specific management plans and land-use plans reflect the obligations set out in First Nation Final Agreements (Chapters 16 and 10) while at the same time integrate needs and responsibilities at the local, territorial, and national level.

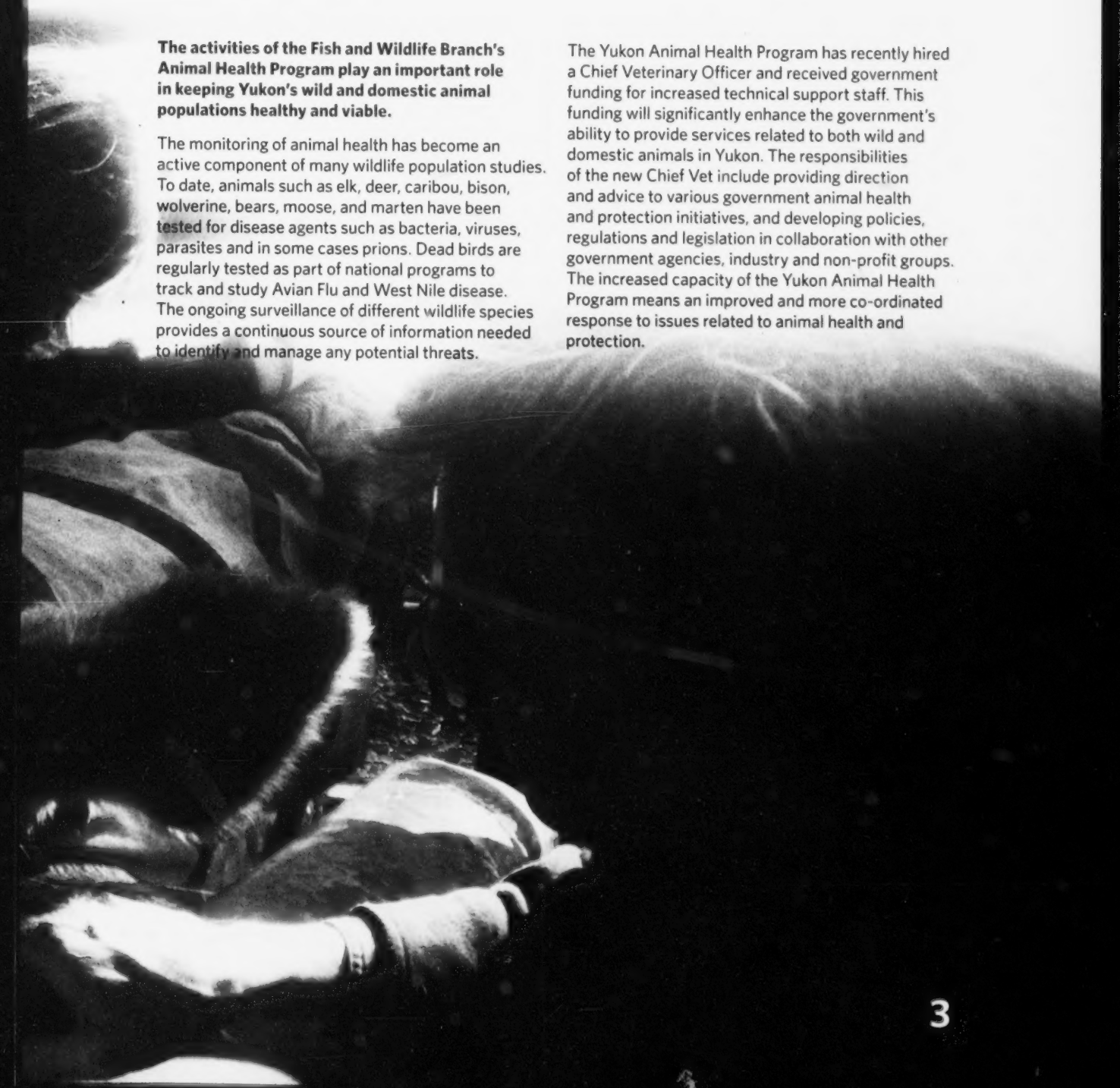
The 52 Fish and Wildlife staff members have a broad range of skills and expertise to meet these challenges. Wildlife, fish, and habitat biologists and technicians, planners, managers, specialists and support staff work together, along with our partners, to deliver programs that address today's complex wildlife issues and enhance Yukoners' understanding and appreciation of the natural environment.

This booklet highlights the range and variety of just some of the projects and programs that the Fish and Wildlife Branch carried out in 2009-2010. If you would like more information about these or any other projects, please visit http://www.environmentyukon.gov.yk.ca/ or stop in at your local Environment Yukon office.

Monitoring the health of wild and domestic animals helps protect against the transmission of diseases and parasites between species.

Photo: Dennis Senger

Protecting the health of Yukon animals

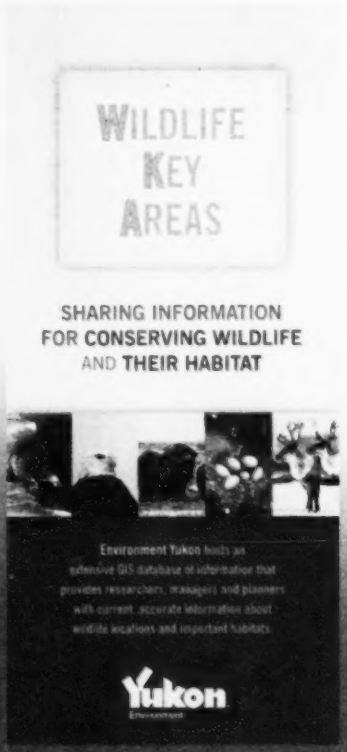


The activities of the Fish and Wildlife Branch's Animal Health Program play an important role in keeping Yukon's wild and domestic animal populations healthy and viable.

The monitoring of animal health has become an active component of many wildlife population studies. To date, animals such as elk, deer, caribou, bison, wolverine, bears, moose, and marten have been tested for disease agents such as bacteria, viruses, parasites and in some cases prions. Dead birds are regularly tested as part of national programs to track and study Avian Flu and West Nile disease. The ongoing surveillance of different wildlife species provides a continuous source of information needed to identify and manage any potential threats.

The Yukon Animal Health Program has recently hired a Chief Veterinary Officer and received government funding for increased technical support staff. This funding will significantly enhance the government's ability to provide services related to both wild and domestic animals in Yukon. The responsibilities of the new Chief Vet include providing direction and advice to various government animal health and protection initiatives, and developing policies, regulations and legislation in collaboration with other government agencies, industry and non-profit groups. The increased capacity of the Yukon Animal Health Program means an improved and more co-ordinated response to issues related to animal health and protection.

Sharing information for conserving wildlife and their habitat



Environment Yukon maintains an extensive GIS database of *wildlife key areas*. These are the areas that biologists have determined to be important to wildlife species during the significant stages of their life cycle. For example, a key area is the place where caribou group together during the breeding season, where grizzly bears den in the fall, and where sheep give birth in the spring. Winter range, fall rut areas, mineral licks, and seasonal travel corridors are also recognized as key areas. Some species use key areas at the same time every year, while other species may only use them when forced to by certain conditions such as severe weather. Key areas are necessary to keep wildlife populations healthy.

Identified key wildlife areas are recorded in the database and the information is presented as digital maps that are available to view or print. The maps are being used to support environmental assessment reviews and by managers and planners who need current accurate information about wildlife location and important habitats. The maps and database are regularly updated with information supplied by regional and species biologists and community experts, such as trappers, hunters, guides, pilots and others who travel extensively on the land.

More information on wildlife key areas, including the maps, can be found at http://environmentyukon.gov.yk.ca/mapspublications/wildlife_key_areas.php

Managing wood bison in the Aishihik area

As part of the programs to manage species at risk, the Fish and Wildlife Branch monitors the size, distribution, composition, survival rates and movement of the Aishihik wood bison herd.

Environment Yukon began to reintroduce wood bison to the south-west Yukon in 1986, as part of a national effort to recover this threatened species. Since then, the herd has being growing, slowly but steadily, and now occupies an annual range of about 9,000 km^2.

In July 2009, the Fish and Wildlife Branch conducted a helicopter survey to figure out the current size of the population, using a technique called mark-resight. This method, which was also used in the 2007 survey, involves 'marking' a number of animals and then seeing how many marked animals are among those you count at a later date. The field work is conducted in July when the bison have formed large post-calving groups on high ground where they are easier to see and count.

During the first day of the survey, the field crew used a paint ball gun to mark a small percentage of the animals they found in each group. A total of 59 bison were marked this way with blue paint. Additionally, 25 wood bison were marked with yellow radio collars. Over the next three days, the survey crew flew the study area again to count as many bison as possible. This year, they counted 564 animals.

Using the number of animals that were marked and the number of animals that were counted in total, biologists used a proven mathematical formula to calculate the size of the herd. The estimated size of the population is currently 1151 bison, indicating that the numbers have grown slowly since 2007 when the estimate was 1089. The 2009 survey also found lower numbers of calves than recorded in the past. Fewer calves may be due to the hard winter the previous year when the snow was so much deeper and to increased harvesting pressure. The next survey will be done in 2011.

The Fish and Wildlife Branch has an ongoing program to maintain radio collars on wood bison. These twenty-five radio collared bison help to locate animals during aerial surveys and assist in determining the population estimate.

Biologists use paint ball guns to mark the bison with blue paint. Marking the bison this way is an effective technique for getting an estimate of the total number of animals in the herd. Wood bison are listed as a *threatened* species, under the federal *Species at Risk Act* and require ongoing thorough monitoring.

Community-based Fish and Wildlife Work Plans

The community-based approach to fish and wildlife management originated in the mid-1990s as cooperative way of implementing First Nation Final Agreements. Since then Environment Yukon has used this approach throughout the Yukon to identify local fish and wildlife management concerns, priorities and possible solutions.

An important part of this approach is the cooperative development and implementation of community-based fish and wildlife work plans. Each plan describes how together the First Nation, local Renewable Resources Council and Environment Yukon's Fish and Wildlife Branch will coordinate the management of fish and wildlife populations and their habitats.

These are practical plans, developed with substantial input from the community to identify and document fish, wildlife, and habitat management priorities within First Nation traditional territories. The plans outline community concerns and solutions to topics such as the management of different fish and wildlife species, harvest levels, and community education. The plans also identify who will aim to carry out each proposed solution.

Currently, plans are either in place or under development in five Yukon First Nation traditional territories: Little Salmon/Carmacks, Na-Cho Nyäk Dun, Teslin, North Yukon and Champagne and Aishihik.

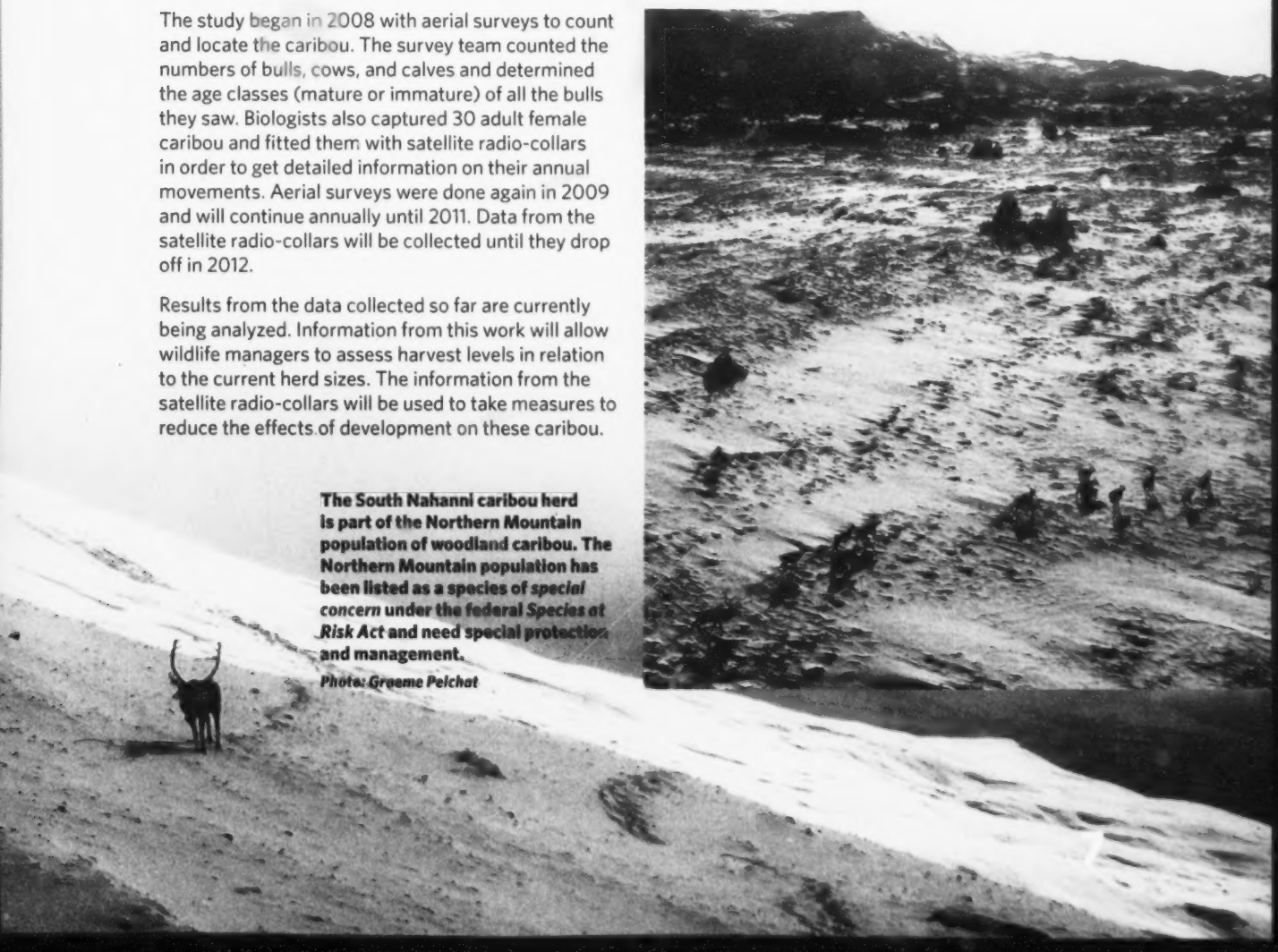
Nahanni Caribou Project

Biologists with the Fish and Wildlife Branch have taken the lead in a multi-jurisdictional study of the South Nahanni mountain caribou herd. This herd ranges from eastern Yukon across the border into the NWT and can easily be hunted from the Nahanni Range Road. The study was prompted by concerns over harvest pressure, combined with the potentially harmful effects of existing and planned industrial developments. The objective of the multi-year study is to estimate the size of the herd, its sex and age structure and to assess its movements and seasonal distribution.

The study began in 2008 with aerial surveys to count and locate the caribou. The survey team counted the numbers of bulls, cows, and calves and determined the age classes (mature or immature) of all the bulls they saw. Biologists also captured 30 adult female caribou and fitted them with satellite radio-collars in order to get detailed information on their annual movements. Aerial surveys were done again in 2009 and will continue annually until 2011. Data from the satellite radio-collars will be collected until they drop off in 2012.

Results from the data collected so far are currently being analyzed. Information from this work will allow wildlife managers to assess harvest levels in relation to the current herd sizes. The information from the satellite radio-collars will be used to take measures to reduce the effects of development on these caribou.

The Nahanni Caribou Project has been funded by multiple partners including Environment Yukon, Parks Canada, Environment and Natural Resources (Government of the Northwest Territories), and the Canadian Parks and Wilderness Society (NWT chapter). Assistance has been provided by industry including Selwyn Resources and North American Tungsten Ltd. Community members from both Yukon and the Northwest Territories have participated in all survey work.



The South Nahanni caribou herd is part of the Northern Mountain population of woodland caribou. The Northern Mountain population has been listed as a species of *special concern* under the federal *Species at Risk Act* and need special protection and management.

Photo: Graeme Pelchat

Conserving the Porcupine caribou herd

The Fish and Wildlife Branch and its partners have tried for the past seven years to conduct a full population count of the Porcupine caribou herd. The herd's population was estimated at 178,000 in 1989 and is now projected to be between 90,000 and 100,000. Despite many attempts, conditions have never been favourable and an updated estimate of the herd size is still not available. However, Environment Yukon and its partner agencies in the NWT and Alaska are able to continue with many other essential management activities.

The radio-collaring program also lets biologists monitor body size, disease rates, and late winter condition and pregnancy rates of the Porcupine herd.

Overall research and management of the herd is guided by management plans developed by the International Porcupine Caribou Management Board and the Canadian-based Porcupine Caribou Management Board.

One of the programs conducted by the Branch maintains about 125 radio collars on selected animals in the herd. As caribou die of natural causes, biologists need to deploy new collars in order to maintain the overall number. The caribou are collared for different reasons including to document seasonal range use and migration patterns and to determine adult mortality.

Other programs include composition counts. A late winter count has been completed annually since 1993 to document the survival rate of calves over the winter. In 2009, a composition count was done during the fall rutting season to estimate the ratio of males in the herd. The Branch also works with hunters in Old Crow on a body condition study that measures the fat on harvested caribou. Tracking fat on an annual basis provides valuable information on the overall health of the herd.

The Branch operates two hunter check stations on the Dempster highway — one at the north end and one at the south. These stations act as a point of contact with the hunters and are a useful way to collect information on the number of caribou being harvested. Biological samples are also collected at the check stations.

Reporting on Yukon Fisheries

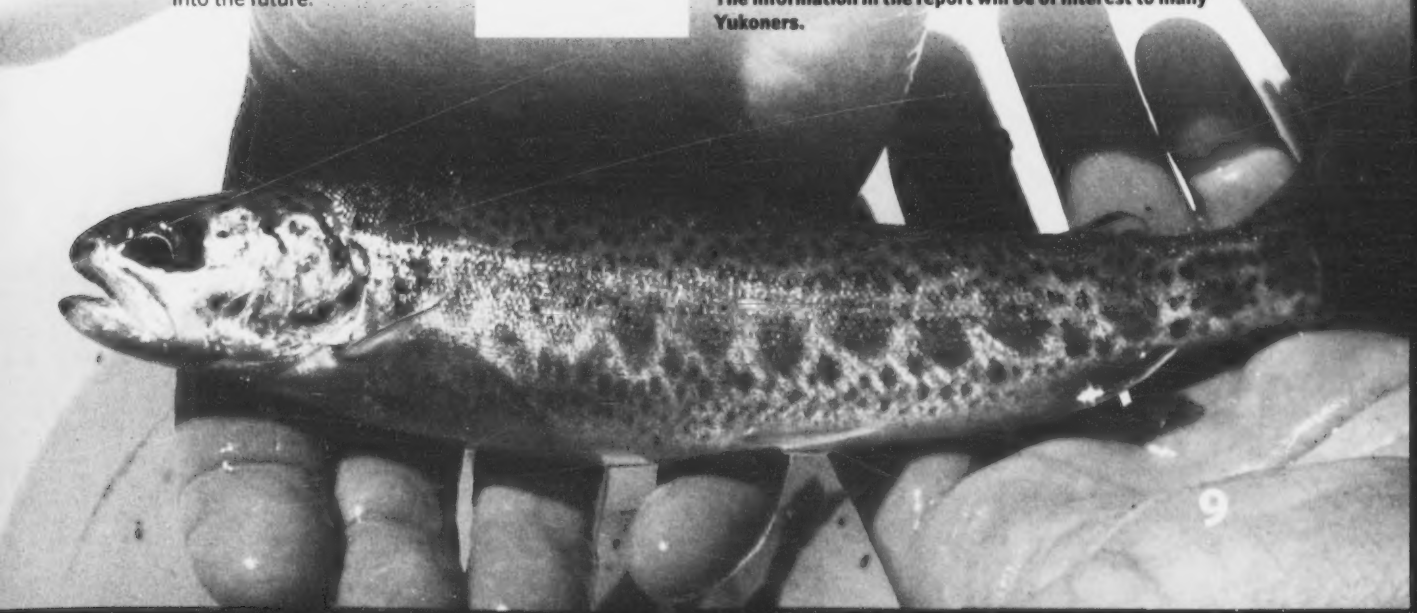
The Fisheries Section of the Fish and Wildlife Branch is preparing a comprehensive report on the state of Yukon fish, fisheries, and aquatic ecosystems. It has been 20 years since the Government of Yukon's fisheries program began. It's time to take stock of the program's many activities and of the health of resource itself. It is time to look at how management has been conducted, how it has changed over the years, and what are the challenges of the future.

The Status of the Yukon Fisheries (SOYF) contains a broad range of information including an overview and assessment of fish populations and their environments, as well as a description of Yukon's fisheries management activities. The report explains what is being done to protect the resources through regulation and legislation, education, and ongoing monitoring of fish populations and fish harvesting. The report also looks at what has been learned about Yukon fish and fisheries and identifies goals for maintaining and enhancing these resources into the future.

Yukon Freshwater Fishes

The SOYF examines the factors that can result in negative impacts on fish, fish habitat, and aquatic ecosystems. Fishing pressure, disease and parasites, aquatic invasive species, and changes to habitat can all have harmful effects on fish populations. The SOYF also explains how fisheries regulations are used to protect and maintain healthy fish resources for the future.

There are thirty-three species of freshwater fish and four salmon species in Yukon. The SOYF examines the value of these species in both economic terms (such as the recreational and commercial fisheries) and non-economic terms (such as role they play as part of the ecosystem). The information in the report will be of interest to many Yukoners.



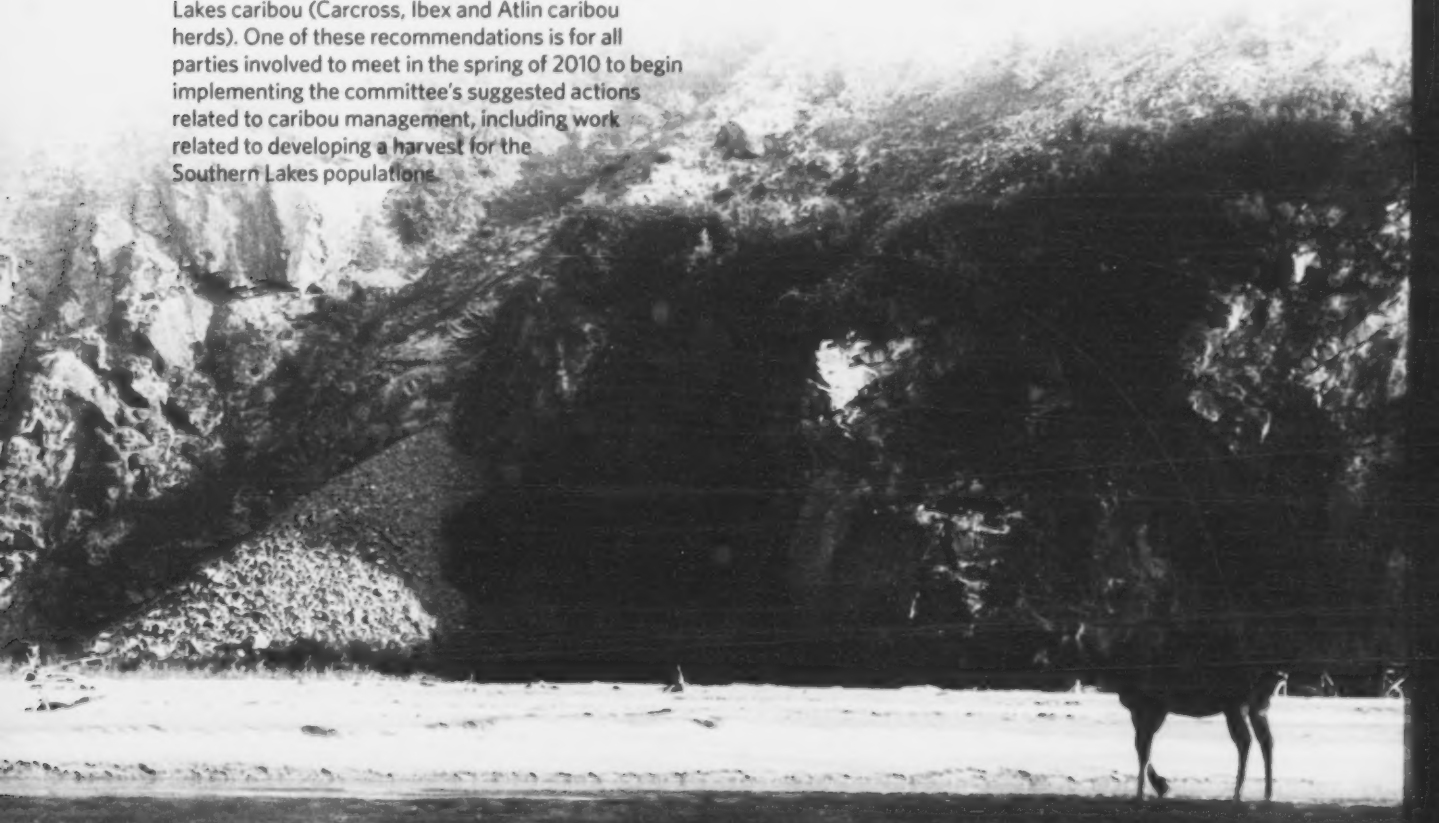
Southern Lakes Wildlife Coordinating Committee

The Southern Lakes Wildlife Coordinating Committee is made up of representatives from the six First Nation governments in the Yukon's Southern Lakes region and the governments of Yukon, BC and Canada. The committee was established in January 2008 under the Carcross/Tagish First Nation and Kwanlin Dün First Nation Final Agreements for a term of three years. Working closely with local communities and wildlife management bodies, the committee's role is to coordinate the management of wildlife populations and their habitats in the Southern Lakes area, and to improve communications among the parties.

In January 2010, the committee made final recommendations on the management of Southern Lakes caribou (Carcross, Ibex and Atlin caribou herds). One of these recommendations is for all parties involved to meet in the spring of 2010 to begin implementing the committee's suggested actions related to caribou management, including work related to developing a harvest for the Southern Lakes populations.

Over the last year, the committee has also been working to develop recommendations on moose recovery. These recommendations have been prepared with input from the public, as well as the board and councils. They address issues related to population, habitat and education. The committee plans to submit draft recommendations for review by the parties this spring. Other immediate priorities for the committee include work on large carnivore management, and access and land management.

More information about the committee can be found at www.southernlakeswildlife.ca



Interpreting Yukon's natural environment

The focus of the Fish and Wildlife Branch's *Wildlife Viewing Program* is to promote stewardship of Yukon's wildlife, habitat and wilderness. Popular year-round activities include talks, demonstrations, and nature walks covering such diverse topics as elk bugling, bat viewing, and the ecology of the Takhini Salt Flats. The program coordinates *A Celebration of Swans*, Yukon's single greatest wildlife viewing event, annually attended by 10% of Yukoners. Interpreters at Swan Haven deliver programs to over 700 students each spring.

The program develops guides and booklets to highlight Yukon's biodiversity. In 2009/10 the new brochures *A Guide to Roadside Wildflowers, Naturally Carcross* and *A Checklist of the Birds of Dawson, Yukon* were produced. *Yukon's Wildlife Viewing Guide* provides information on wildlife viewing sites along the territory's main roads. The ninth edition has seen the greatest revision to date with more pictures and animal descriptions. After all, the key to successful wildlife viewing is to know where and how to look.

Learn more about the Wildlife Viewing Program and upcoming events at www.yukonwild.ca

"When one tugs at a single thing in nature, he finds it attached to the rest of the world." - *John Muir*

The Wildlife Viewing Program attempts to make that connection.

Managing grizzly bears

The Fish and Wildlife Branch is currently conducting two studies of grizzly bears in Yukon. Both studies are made up of several different components, designed to learn about grizzly bear population size, birth rate, death rate, cub survival, where bears can be found at different times of year, and how much they move around. All of this information is very important to determine and develop appropriate management strategies that balance harvest with the maintenance of long term, healthy populations.

Biologists are using a variety of activities to get the information they need. Bears are captured and fitted with radio collars in order to track their movements, learn about their survival rates and determine habitat use. The analysis of DNA from hair samples collected at specially constructed hair snaring sites is used to estimate the size of the population. The knowledge of local residents and hunters provides on the ground and personal observations that add to the overall understanding of bear behaviour and distribution.

One study began six years ago and covers a large area in the northern most part of the territory, in the Inuvialuit Settlement Region. The Branch's partners in this study are Parks Canada (Western Arctic Field Unit), the Aklavik Hunters and Trappers Committee, and the Wildlife Management Advisory Council (North Slope). All field work will be finished by September 2010, with a final report available in 2011. A mid-term report of the study's results can be found at www.wmacns.ca/pdfs/186_rpt_grizzly_midterm.pdf

The other study began in the summer of 2009 and is being conducted in the Southern Lakes region of Yukon. Environment Yukon is leading this study, in collaboration with the First Nations. Southern Lakes Wildlife Coordinating Committee is providing additional direction. The initial field work found the density of bears in the study area to be far lower that expected. The area's bear population also experiences a high number of deaths as a result of conflicts with people.

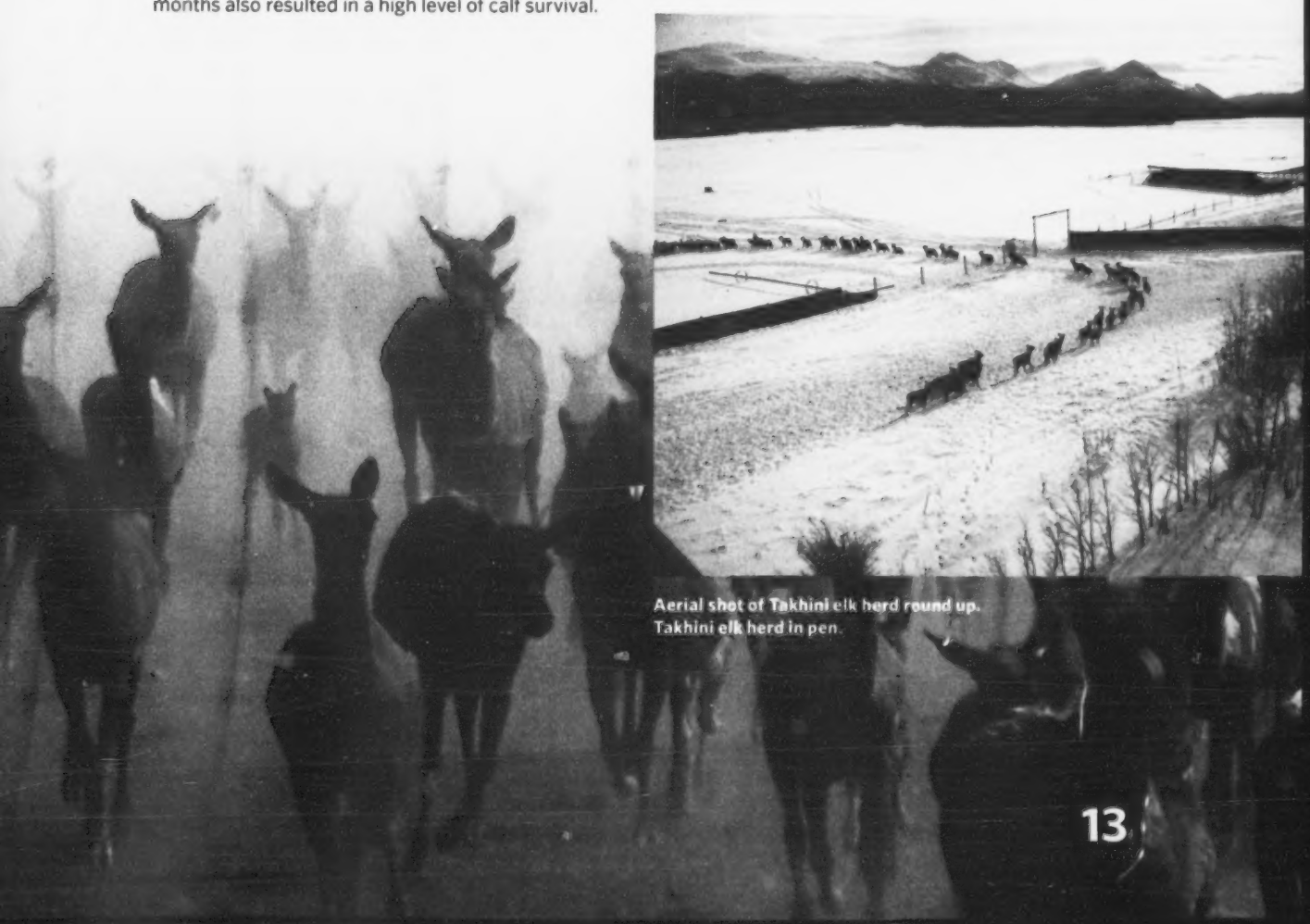
More information on Southern Lakes study can be found at http://environmentyukon.gov.yk.ca/wildlifebiodiversity/slakesbearstudy.php

Radio collars equipped with GPS units are programmed to record information six times a day. The data is retrieved after the collars drop off the bears.

Learning about elk and winter ticks

In 2007, the Fish and Wildlife Branch found winter ticks (*Dermacentor albipictus*) on elk in the Yukon's Takhini Valley and Braeburn herds. The presence of these ticks caused a lot of concern for biologists and the public because no one really understood how the ticks might affect the elk and other animals such as moose. In an effort to control the spread of the ticks and to learn more about their ecology, the Branch captured elk from the two herds in the late winter of 2008, 2009 and 2010. The elk were held in pens until the ticks naturally dropped off as part of their annual life cycle. This was a very successful program. The released elk were free of ticks and a lot was learned about their overall health. Holding the elk for several months also resulted in a high level of calf survival.

After three years of study, wildlife managers now believe that the presence of winter ticks is not as large a threat to moose and caribou populations as originally feared. Winter ticks have been found to be widespread and well established in deer and elk populations. They are here to stay as there is no practical way to get rid of them. The Fish and Wildlife Branch continues to monitor the numbers and distribution of winter ticks through the collection and inspection of elk, deer moose and caribou hides. More information on winter ticks can be found at: http://environmentyukon.gov.yk.ca/wildlifebiodiversity/stepstomanagewintertick.php



Aerial shot of Takhini elk herd round up.
Takhini elk herd in pen.

Elk open to first permit hunt in September 2009

After relatively low and stable populations for many years, elk are increasing in the Yukon. The Management Plan for Elk in the Yukon was completed in June 2008. The plan recognizes that the numbers of elk are now high enough to sustain a harvest.

The first ever permit hunt drew a lot of interest, with over 1,200 Yukoners applying for the 40 permits that were issued in September 2009. A further 30 permits were issued in late winter of 2010. Twenty-five percent of these permits were issued to First Nations. By the end of the season, 23 elk had been harvested in the permit areas and three were taken in the exclusion zone. The Fish and Wildlife Branch anticipates that the numbers of permits will be lowered as the population reaches its ideal size.

The harvest is being used to control the size of the population and its distribution. More and more, elk are coming into conflict with human activities, particularly agriculture. The hunt is designed to focus the majority of the effort on areas where wildlife managers would like to see few numbers elk in order to reduce such conflict. A more limited hunt is permitted in the areas best suited to sustain a healthy population.

Keeping bears *Wild and Alive*

In the spring of 2009, the Fish and Wildlife Branch, in conjunction with Conservation Officers Services and other Environment Yukon departments, developed a program to reduce bear-human conflict in the Champagne and Aishihik Traditional Territory.

Working with the Alsek Renewable Resources Council, the Champagne and Aishihik First Nation and Parks Canada, the program included many activities to raise awareness of the issue, improve community safety and reduce bear mortality.

Educational materials included a springtime household attractant checklist distributed to all local residents that provided information on how to reduce or eliminate bear attractants. Local residents were encouraged to report bear sightings through the wide distribution of fridge magnets that provided contact numbers. Soapberry plants, a favourite summer food, were removed from key areas in order to eliminate their potential of attracting bears. Camera-trapping showed that no bears came to these sites. Residents were surveyed to assess their awareness of how to reduce bear-human conflicts. A follow-up survey will be done in coming years to see how well the program is working.

Similar programs to raise awareness and keep bears Wild and Alive were also implemented in Dawson over the summer.

Soapberry removal.

Wild and Alive banner in Canada Day parade.

Monitoring ecological change

The Fish and Wildlife Branch is an active partner in the Community Ecological Monitoring Program (CEMP). Originating in the Kluane region, the program was expanded to include Mayo, Watson Lake and Whitehorse in 2005, and Faro in 2007. The main objective of the program is to learn how Yukon's ecosystems are responding to climate change.

This is a complex question to assess and understand, as different plants and animals can be affected directly and indirectly by changes such as the amount of rainfall and increases in temperature. Monitoring programs detect change by gathering the same type of information, in the same place, and in the same way year after year. They are long-term programs that depend on regular and consistent data collection.

The CEMP collects information annually on the production of white spruce cones, mushrooms and ground berries. The program also monitors the numbers of small mammals, snowshoe hare, and predators such as coyotes, lynx and Great Horned Owls. The CEMP has chosen these measures as the best indicators of change within Yukon's boreal forest ecosystem.

Results to date show some interesting patterns. For example, spruce trees produce a variable number of cones each year, and at irregular intervals very large crops are produced in 'mast years'. The abundant cone crops seemed to occur in the same year at all sites monitored in the Yukon. However, this kind of synchrony among sites was not true for numbers of red-backed voles. The five species of ground berries in the Kluane area all responded differently to different climatic signals of temperature and rainfall. These types of results suggest that it will be a challenge to understand all the complex relationships in the system.

An important part of CEMP is the community involvement. The CEMP wants to link these ecological measurements with information obtained through local knowledge interviews in selected communities. Local knowledge can provide valuable and essential additional insight into ecological changes. For example, the local knowledge interviews completed by the Regional Biologist in Mayo identified changes in the abundance of wolves, wolverine, moose and deer, as well as changes in the availability of fish and berries for the local population over the past five years.

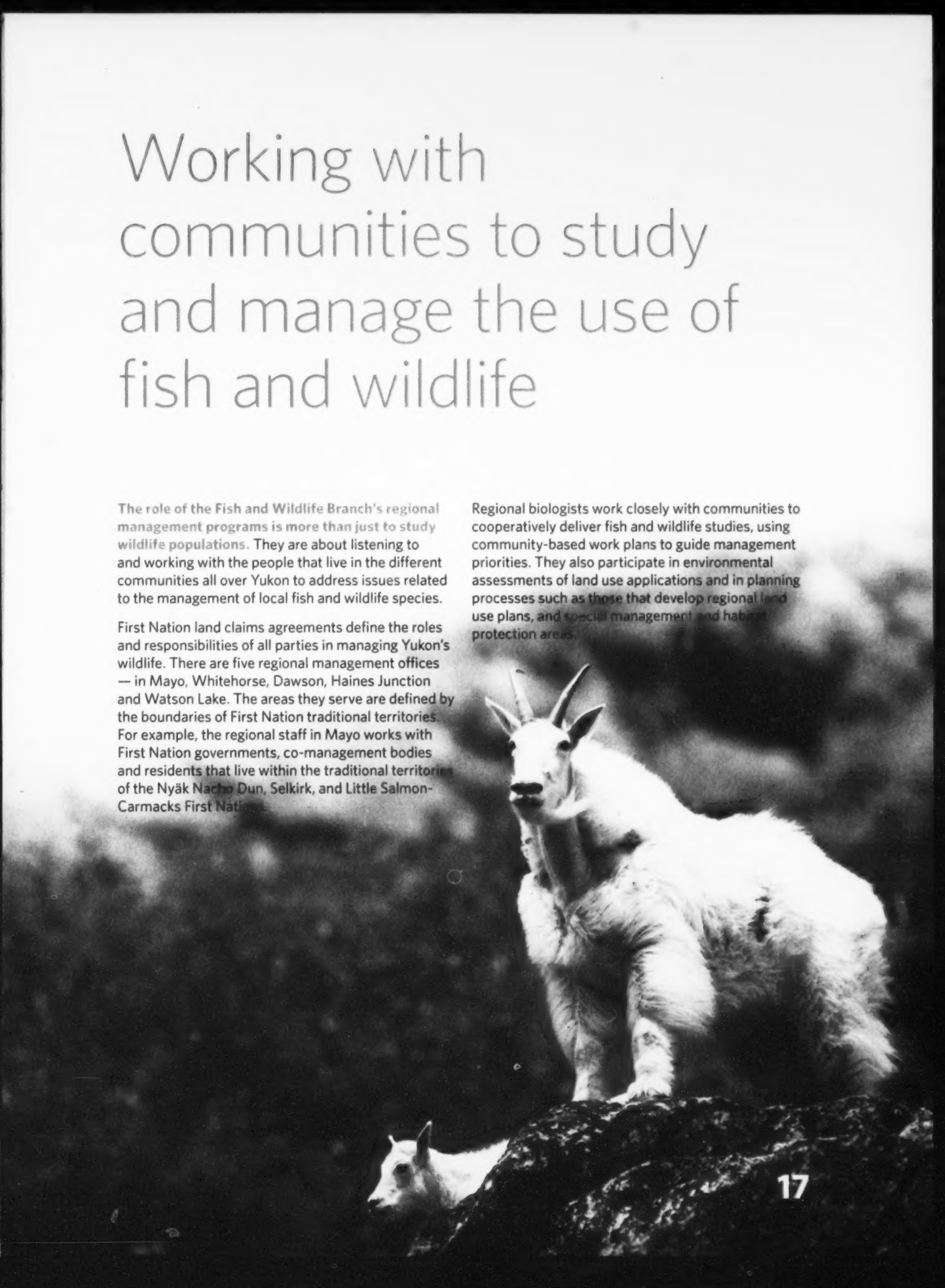
The CEMP is a partnership between researchers at the Arctic Institute Research Station at Kluane Lake, Environment Yukon and Yukon College Monitoring programs are now in place in five regions of the Yukon. As additional information is added in the years to come, it will be easier to determine the patterns of regional ecosystem change.

Working with communities to study and manage the use of fish and wildlife

The role of the Fish and Wildlife Branch's regional management programs is more than just to study wildlife populations. They are about listening to and working with the people that live in the different communities all over Yukon to address issues related to the management of local fish and wildlife species.

First Nation land claims agreements define the roles and responsibilities of all parties in managing Yukon's wildlife. There are five regional management offices — in Mayo, Whitehorse, Dawson, Haines Junction and Watson Lake. The areas they serve are defined by the boundaries of First Nation traditional territories. For example, the regional staff in Mayo works with First Nation governments, co-management bodies and residents that live within the traditional territories of the Nyäk Nacho Dun, Selkirk, and Little Salmon-Carmacks First Nations.

Regional biologists work closely with communities to cooperatively deliver fish and wildlife studies, using community-based work plans to guide management priorities. They also participate in environmental assessments of land use applications and in planning processes such as those that develop regional land use plans, and special management and habitat protection areas.



Fish and Wildlife technical reports released in 2009–2010

Lake trout population assessment: Wellesley Lake 1997, 2002, 2007

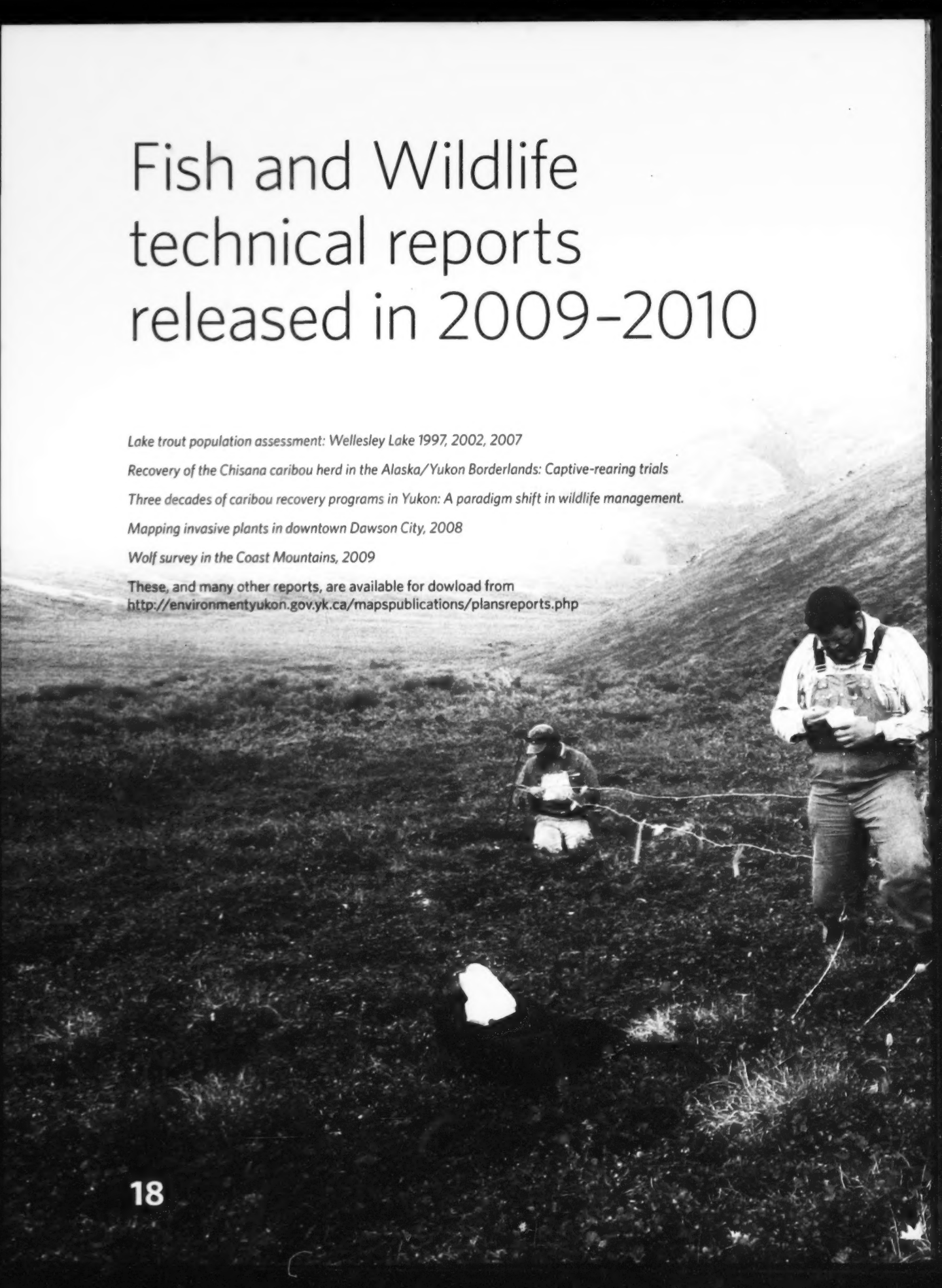
Recovery of the Chisana caribou herd in the Alaska/Yukon Borderlands: Captive-rearing trials

Three decades of caribou recovery programs in Yukon: A paradigm shift in wildlife management.

Mapping invasive plants in downtown Dawson City, 2008

Wolf survey in the Coast Mountains, 2009

These, and many other reports, are available for dowload from
http://environmentyukon.gov.yk.ca/mapspublications/plansreports.php



New from the Wildlife Viewing Program

- *Common Yukon Roadside Wildflowers*
- *Checklist of the Birds of Dawson, Yukon*
- *Naturally Carcross*
- *Yukon's Wildlife Viewing Guide* (English, revised)
- *Driving the Fire Belt: North Klondike Highway* (revised and updated)
- *Viewing Wildlife at Wye Lake* (revised)

These, and many other booklets and brochures, are available for dowload from http://environmentyukon.gov.yk.ca/mapspublications/brochures.php